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Age and Variations in the Attitude towards Scottish Independence – an Exploration of Cohort and Lifecycle Explanations

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Abstract

This paper presents findings of an exploration into the sources of the association of age with attitude towards Scottish independence. Polls and surveys have repeatedly shown that the lower the age of a person, the higher is the likelihood of them favouring independence over other ways of ruling Scotland. Using Klandermans' work on why people join social movements as theoretical framework, a binary logistic model of attitude towards independence was constructed (Nagelkerke $R^2=.21$). In this model, cohort and lifecycle indicators were identified and used in separate models. It was found that the cohort model reduced the age group coefficients by about a third of their power, suggesting that cohort effects accounted for some of the observed age effects, while the age coefficients in the lifecycle model remained unchanged. While the association between attitude towards Scottish independence and age is weak, the fact that the results presented in this paper suggest that they are at least partly based on cohort differences means that support for Scottish independence may grow in the coming decades.

Scottish independence – age – cohort – lifecycle – logistic regression

Introduction

“Friends - we ARE Scotland’s independence generation. And our time is now” (Alex Salmond, 2013) - with these words Scotland’s First Minister and leader of the Scottish National Party (SNP) closed his address of the 2013 SNP Conference in Perth, in which he had delivered a wide array of arguments for voting in favour of Scottish independence in the referendum on 18th September 2014. Although he most likely did not intend to, he thereby indirectly raised an interesting question that has played a vital part in the discussions around the referendum: why do polls and surveys constantly report a significant variation of support for Scottish independence by age? Is there indeed something like a generational effect that influences people’s attitudes towards how Scotland should be ruled? While members of the Scottish parliament like Willie Rennie claim that lowering the voting age for the referendum to include 16 and 17 year-olds was “an important step in our efforts to build a fairer society”, it is commonly assumed that the SNP supported this move primarily because young voters tend to show higher rates of support for independence (Black 2013).

Two distinct exploratory paths open up when regarding the effect of age on the attitude towards a split of Scotland from the UK: they could be based on lifecycle effects, stemming from the changes in socio-economic position of people in the course of their lives, or they could be fuelled by generational/cohort effects. These are commonly described as based on shared experiences, such as a particular economic or political climate, that leave a lasting impression on a group of people’s attitudes and behaviour.

The Scottish Social Attitudes Survey (SSA) collects data on the attitudes of Scotland’s residents towards ideas associated with an independent Scotland in yearly cross-sectional surveys since 1999. In nearly all years, their likeliness of supporting those ideas was significantly associated with age. When asked how they think Scotland should be ruled, overall (with some variations over the years) about three out of ten respondents picked one of the two response options for a Scotland independent from the UK (within or apart from the EU); however, apart from the 2007 to 2010 Scottish election period, when support for Scottish independence dropped in nearly all age groups, amongst the 18-24 year-olds, almost four out of ten respondents chose one of these response options (captured here in a computed dummy indicator for support of Scottish independence), while only about two out of every ten respondents over age 75 did so (Table 1).

Table 1: rates of support for Scottish independence by age groups, summary for 1999-2012

	Age categories in years						Total
	18-24	25-44	45-64	65-68	69-74	75+	
respondents choosing Scottish independence over other ways of ruling Scotland	38.4%	33.2%	29.2%	23.7%	21.4%	20.2%	30.0%

Source: Scottish Social Attitudes Survey (SSA) 1999-2012 (excluding 2008); 5.5% (1,084) missing. Cramer’s V = .112. $p < 0.001$.

In 1999, shortly after the Scottish Parliament was established, SSA results showed that of the youngest part of the Scottish population eligible to vote, 47.8% favoured Scottish independence. After some decrease of these figures in the subsequent years, in 2004 over half of the 159 representatives (50.9%) of the 18-24 age group gave this answer. However, a school based survey of 1,018 respondents about the topic amongst 14 to 17 year-olds by Eichhorn et al. (2013) showed that

these did not necessarily follow the trend that the SSA suggested: 60.3% were decidedly against Scotland being an independent country, while only 20.9% were clearly in favour of the idea and nearly a fifth were undecided.

The question of the reason for the association of age with support for independence is relevant in two aspects:

1. It gives an indication of how much the outcome of the referendum in September 2014 can be influenced: if there is a strong cohort effect at play, one would expect the outcome to be determined already. If, on the other hand, there is a lifecycle effect, some factors that have a strong association with a specific age groups' attitude towards a split from the UK may yet change and consequently also change this age groups' opinion on Scottish independence.
2. What comes after the referendum? If the majority of voters votes against leaving the UK, this does not mean any idea of independence is forever going to be buried. And indeed, if there is a cohort or generational effect detectable, this would suggest better chances for this endeavour in the future: the older, more sceptical voters would eventually grow silent, and a new generation of people pro-independence would want to be heard.

The following two graphs illustrate the lifecycle and the cohort perspective. They present age groups and cohort groups in their attitudinal development over time. To make them more easily readable, the timeline has been reduced from yearly points to the Scottish election periods, thus removing smaller variations in the curves.

Figure 1 shows the rate of respondents having chosen a pro-independence stance in the interviews by their age group. This allows for a variability in group membership: respondents who were in the 45-64 age range in 1999 could have fallen into the 65-68 range in 2005 and the 69-74 age range in 2008 (since the SSA is a repeated cross-sectional survey, it is, however, unlikely that the same person was interviewed at all of these time points). This perspective thus takes into consideration that the respondents' living circumstances may change with progressing age (and this not just randomly on the individual level but systematically, statistically associated with on-setting age, on the macro level), allowing for lifecycle effects. To capture these effects accurately, it was decided to divert from the conventional age group definitions: just as the 18-24 year-olds are often distinguished as a relatively narrow age range in which young people start into a new phase of their lives, it was taken into consideration that the phase in life right after retiring from work life may also be such a phase of re-adjustment and new beginnings. Additionally, for some, though not all, older adults, there may come a time of transition into a less agile (physically, mentally or emotionally) phase of their life. Thus it was chosen to differentiate those respondents aged 65 and over more finely into three groups: the group aged 65 to 68 years of age that will most likely have just entered retirement (or face the fact that they have to work beyond the typical retirement age for whatever reason), the group aged 69 to 74 that may be expected to have settled into their lives as pensioners and will for the most part still be quite agile, and the group of people aged 75 and over who may increasingly experience the effects of old age (according to the Office for National Statistics 2012, men aged 65 had an average healthy life expectancy of 10.1 years in the UK in 2008-2010; women of 11.6 years).

Figure 2, on the other hand, is based on fixed membership within the defined groups: it distinguishes by year of birth (unfortunately, year of birth is not provided in the SSA, so that an approximation had to be calculated based on the indicator 'age last birthday'). To keep the graph simple, one cohort

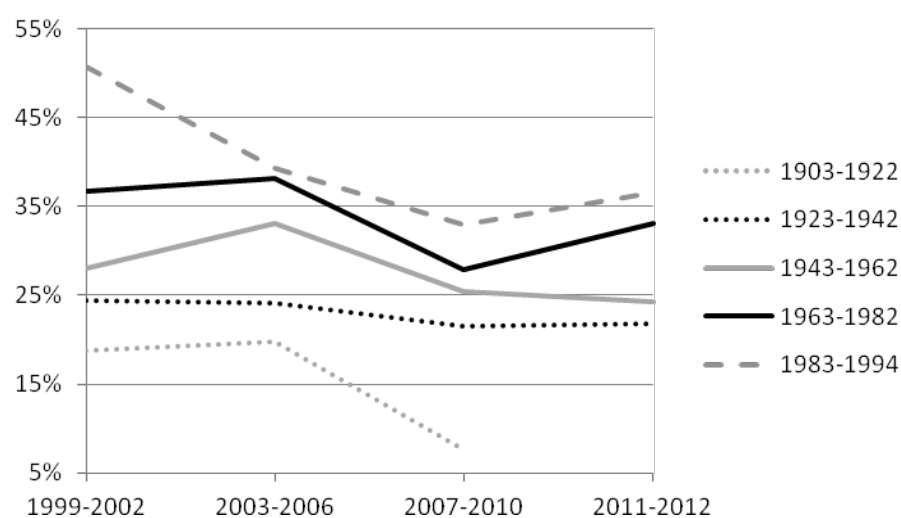
includes a range of twenty birth years, apart from the youngest cohort, which only holds a range of twelve years.

Figure 1: Rate of support for Scottish independence in Scottish election periods by age groups



Source: Scottish Social Attitudes Survey (SSA) 1999-2012 (without 2008); 5.5% (1,084) missing.

Figure 2: Rate of support for Scottish independence in Scottish election periods by 20 year birth cohorts



Source: Scottish Social Attitudes Survey (SSA) 1999-2012 (without 2008); 5.5% (1,084) missing. 2011-2012 rate for the oldest cohort not presented due to small sample size (n=12).

Figure 1 shows that most of the age groups' attitudes towards independence develop in tandem: in the 2003-2006 period support for independence increased in all groups, and in the 2007-2010 period it decreased in all but the oldest age group before increasing again in all but the 65-68 years old group of respondents. Such an observation would point towards the association between age and attitude towards Scottish independence being a lifecycle effect: the older a person becomes, the more likely they are to want Scotland to remain a part of the UK. Even the differences in the development that are also present, such as the slow and continuous increase in the oldest age group in contrast to the up and down in the others, or the drastic drop in support in the 65-68 age group in

20011-2012 would support this: perhaps socio-economic circumstances have changed for these groups at those specific points in time, and this led them to make decisions diverging from the overall trend.

However, Figure 2 shows a similar picture for the cohorts: while all cohorts chose the same general direction of development over the last 14 years (apart from the youngest cohort in the 2003-2006 period), and their overall trend is slightly downwards, which would support the lifecycle hypothesis, there are some differences in their development, so that the possibility that there are cohort effects at play cannot be safely rejected.

The aim of this paper is thus to explore the nature of the relationship of attitude towards Scottish independence and age based on a discussion of possible lifecycle effects and cohort/generational effects and binary logistic regression models. Before this step is taken, it has first to be established which factors may influence a person's opinion on how Scotland should be ruled. Here Bert Klandermans work on why people join and actively support social movements will be utilised to build a theoretical frame. Furthermore, it has to be theorised which of these factors may be regarded as cohort effect indicators and which may be regarded as lifecycle effect indicators before it can be tested with the help of logistic regression in how far they account for the observed age effect.

The Social Movements behind the referendum

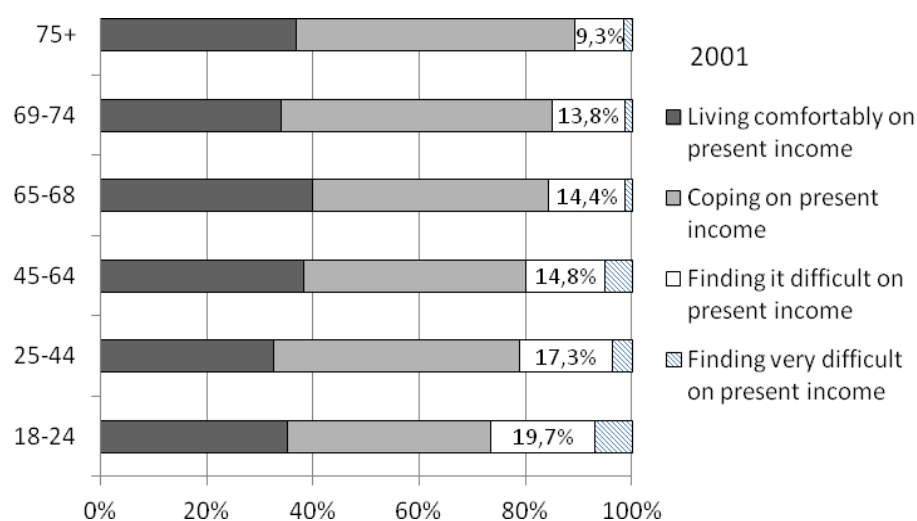
Bert Klandermans (2004; with van Stekelenburg 2010) states that participation in social movements depends on three elements: *demand*, supply, and mobilisation. In simplified words, people need to want to join a social movement, they need to be provided with the opportunity to do so, and they need to be motivated to participate actively. In case of the referendum about Scottish independence, there are in fact two social movements aiming to gain a wide base of support and to motivate these supporters to go and vote in the referendum on 18th September 2014: the Better Together Campaign and the Yes Scotland Campaign. The latter fights for a political – and in consequence also economical – change, whereas the first emphasises the advantages of consistency in contrast to the perceived risks of splitting from the UK.

Klandermans identifies three motives for a person to join such a movement, related to the demand element: *instrumentality*, meaning that the movement promises to change something that the potential participant wants to change, *identity*, the feeling of being part of a group of likeminded people in which they perhaps can gain a respected position through their contributions, and *ideology*, the expression and spreading of personal views and feelings and the gain of meaning in their life.

When looking at the supporters of Scottish independence, what attracts them to the Pro-Independence movement can easily be identified: 'A demand for change begins with dissatisfaction, be it the experience of illegitimate inequality, feelings of relative deprivation, feelings of injustice, moral indignation about some state of affairs, or a suddenly imposed grievance' (Klandermans 2004, p. 362), and the data of the Scottish Social Attitudes Survey demonstrates this. Throughout, people who are in a relatively worse social position or perceive themselves in this manner are more likely to favour independence. Economically, this can be seen in their income perception and their main income source.

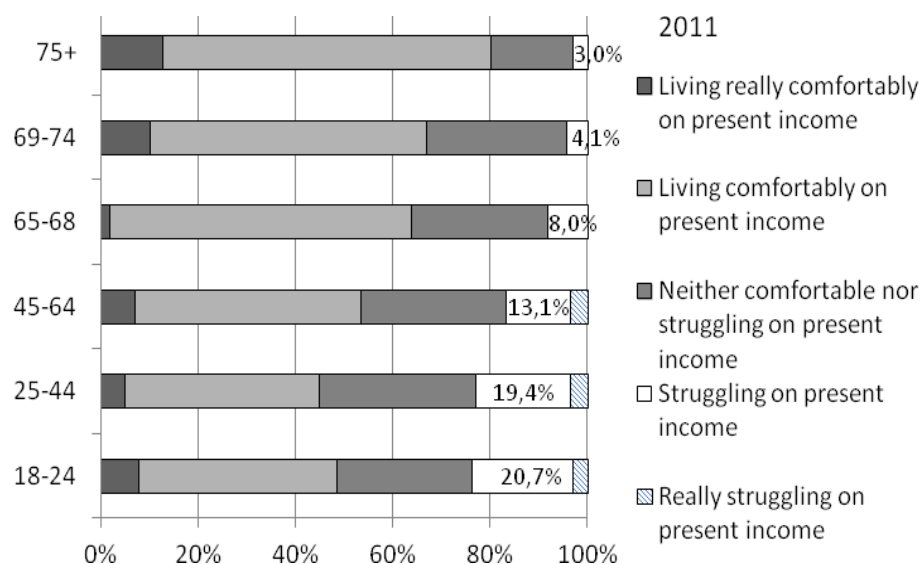
Looking at subjective income perception, there is a clear trend that the better the respondents got by on their income, the less inclined they were towards favouring independence. The SSA asked between 2004 and 2009 which phrase came closest to the respondents' feelings about their income, offering five response categories ranging from 'living very comfortably on present income' over 'coping on present income' to 'finding it very difficult on present income'. From the very comfortable (23.2%) to the difficult (but not very difficult) response category, there was a twenty per cent rise of support for independence; for the age group around the retirement line, support even varied from 13.8% to 50%.

Figure 3: Distribution of perception of income by age group in 2001.



Source: Scottish Social Attitudes Survey (SSA) 2001. 0.3% missing.

Figure 4: Distribution of perception of income by age group in 2011.



Source: Scottish Social Attitudes Survey (SSA) 2011. 0.6% missing.

Figure 3 and Figure 4 are based on similar indicators with differing question wording and response categories from varying years. In both figures there is a clear connection between age and likeliness of being able to get by on your present income. This is not necessarily directly related to the actual

amount of money received each month but rather a subjective measure which may also be influenced by previous experience: if they have had to get by on limited income for a while, they may find it more comfortable than if they'd had to reduce their spending recently or have yet to develop a suitable money management strategy because they are living on their own income for the first time. However, while in 2001 the majority of the population stated they were merely coping on their present income, in 2011 a majority said they were living comfortably or very comfortably on it. While the response categories are not directly comparable – it is possible that had they been offered a 5-point scale, some of the respondents in 2001 would have placed themselves in e.g. a 'comfortable' category if those had been more differentiated – the gap between older and younger people appears to have widened. The share of people over age 75 who say they have difficulties/are struggling on their present income has shrunk to mere three per cent. In contrast, amongst the 18-24 year-olds it has slightly grown to nearly a quarter.

A clear association can also be identified with the respondents' main income source. Amongst employees and students depending on grants, loans, or parental help, about three in ten give an answer that is positive towards an independent Scotland, roughly matching the average. State pensioners (24%) and even more so occupational and private pensioners (20.2%) are more sceptical. On the other hand, respondents depending on job seeker's allowance, income support, or 'other' income sources have a larger tendency to embrace the idea of a radical constitutional change (54.5%, 41.6%, and 38.2% support for the idea respectively). In the Scottish Social Attitudes Survey 1999-2012, the respondents between the ages of 18 to 24 were most likely to state they relied on these income forms (7.2% of them received job seeker's allowance as opposed to merely 2.3% in the overall sample).

Both of these findings suggest that respondents who are not content with their position in the current Scottish society are on average more likely to join the Yes campaigners' side. This can be further corroborated by looking at the influence that marital status has. Looking at the overall population, there is only a small effect of 5 % difference in the rates of people for Scottish independence detectable of whether the respondents live with a partner or not. However, looking at the effect in the different age groups presents a sharper picture: while in the youngest and oldest age groups living with a partner slightly increases the respondents' likeliness to favour a split of Scotland from the UK, in all other age groups it decreases it. This is most pronounced amongst the 25-44 year-olds, where 38% of those living without a partner want independence and only 31% of those with a partner, as well as in the 45-64 age group (34.3%/27.4%). In the 69-74 group the effect nearly disappears before it reverses for those over age 75.

Furthermore, when cross-tabulating support for Scottish independence with partnership status controlling for whether the respondent is employed or a job-seeker, a similar change of effect is observable: in the group of respondents in employment between the ages of 18-64, a split from the UK is less popular with those living with a partner. Conversely, in the job-seeking group, 61% of those living in a partnership favour independence as opposed to 52% of those not living in a partnership.

So being attached, which usually encompasses taking over responsibility for another person's well-being, will make the respondent less willing to take the risk of a changing political climate and an accompanying potential economic change – if there is something to risk, such as a pension or good employment. If, however, due to e.g. a lack of employment or low income the respondents perceive

themselves as unable to fulfil their responsibilities towards a partner, having one will make them more likely to strive for change.

Group identity, age, and Scottish independence

The previously discussed findings can be interpreted both in the frame of instrumentality – of respondents being in what they perceive as a place of disadvantage trying to change their socio-political environment to create opportunities for themselves for gaining an improved position within a new social order – as well as in the frame of ideology: of an expression of discontent with their current situation when supporting independence. The last of the three prerequisites for joining a social movement in Klandermans' theory is the identification with the group.

There have been several varying indicators introduced in the course of the SSA that aimed to capture the feeling of national identity, which seems so crucial when talking about Scottish independence. In all years, respondents were asked whether they thought of themselves as Scottish. They were also asked to locate themselves on a Moreno national identity scale ranging from 'British not Scottish' to 'Scottish not British'. The latter indicator is much stronger correlated with support for Scottish independence than the first: about four out five respondents identified as Scottish in the binary indicator, yet amongst these 'Scottish' people, there was a proportion of supporters of 32.4% that was only slightly above the overall average. Amongst those identifying as 'Scottish, not British' on the Moreno scale, on the other hand, one in two favoured an independent Scotland over other proposed constitutional arrangements. It is thus not so much the question whether the interviewee feels Scottish. The question is if they feel exclusively Scottish: even in the group of respondents saying they considered themselves 'more Scottish than British', the proportion of independence supporters was already slightly below average (29%).

Another indicator that may be connected to group identity is religious affiliation. Even without a measure for how closely connected the respondent is to their local religious community, affiliation with a religion may be an indicator of a perception of connection. Indeed, as can be seen in Table 3, respondents claiming an affiliation with protestant churches, such as the Church of Scotland, are on average around 8% less inclined towards Scottish independence than Roman Catholics or non-Christian believers, and still 6% beneath the rate of support found in respondents with no religious affiliation. Perhaps this is related to Colley's (1992) argumentation that the shared Protestantism was one element in the glue that held the British Empire together; something that emphasises the United Kingdom's shared history and culture, rather than setting Scotland apart.

Table 2: Rate of support for Scottish independence by religious affiliation

Religious affiliation	Rate of supporters for Scottish independence
Church of Scotland	23.5%
Roman Catholic	35.3%
Other Christian	23.7%
Non-Christian	35.6%
No religion	33.9%

Source: Scottish Social Attitudes Survey (SSA) 1999-2012 (excl. 2008). 5.8% missing. Cramer's $V = .115$. $p < 0.001$.

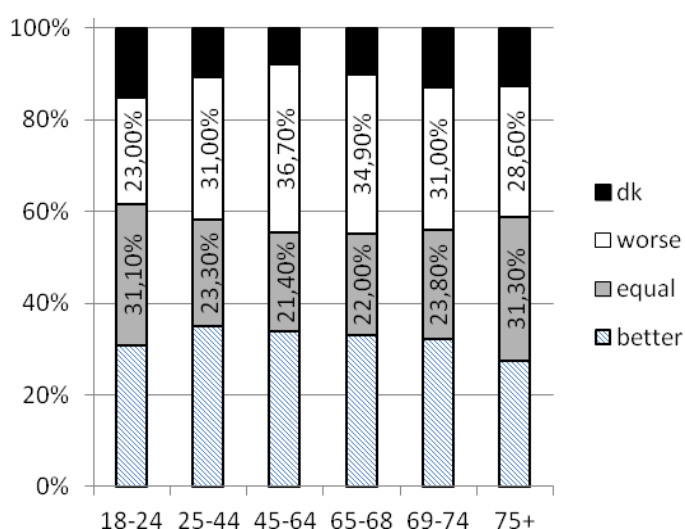
Benefits and risks of Scottish independence

So far in this paper, the personal motivations that may lead people to either want political change or hold on to the status quo were explored, as well as the importance of identifying with either of the movements that promise to advocate Scotland's interests.

However, there is an additional aspect in the decision making process, most prominently voiced by authors that follow the rational choice approach (e.g. Olson 1968): the question what a person has to gain and what to lose if the movement succeeds. This was explored from an objective perspective earlier – someone with a relatively good socio-economic position in the current society or someone that depends on political stability for their livelihood (such as pensioners) is less likely to stand in for change: they have too much at risk.

Yet the SSA moved beyond that in recent years and asked a range of questions concerning the interviewees' expectations of an independent Scotland. In 2009, 2011, and 2012, respondents were asked to predict if as a result of independence Scotland's economy would improve, get worse, or remain the same. About a third of them expected an improvement, nearly a quarter thought there would be no difference, and 21.8% thought it would worsen. About one in ten could not decide. Figure 5 shows that the 25 to 74 year olds are predominantly expecting change (to the better or the worse), whereas the youngest and the oldest age groups had higher proportions of people expecting continuity and of people not knowing what to expect (the latter is already found amongst the 69-74 year olds). Of the 18-24 year olds who do expect change, 30.6% were counting on a positive development and only 23% feared a negative development.

Figure 5: Expectation of development of economy in independent Scotland by age groups

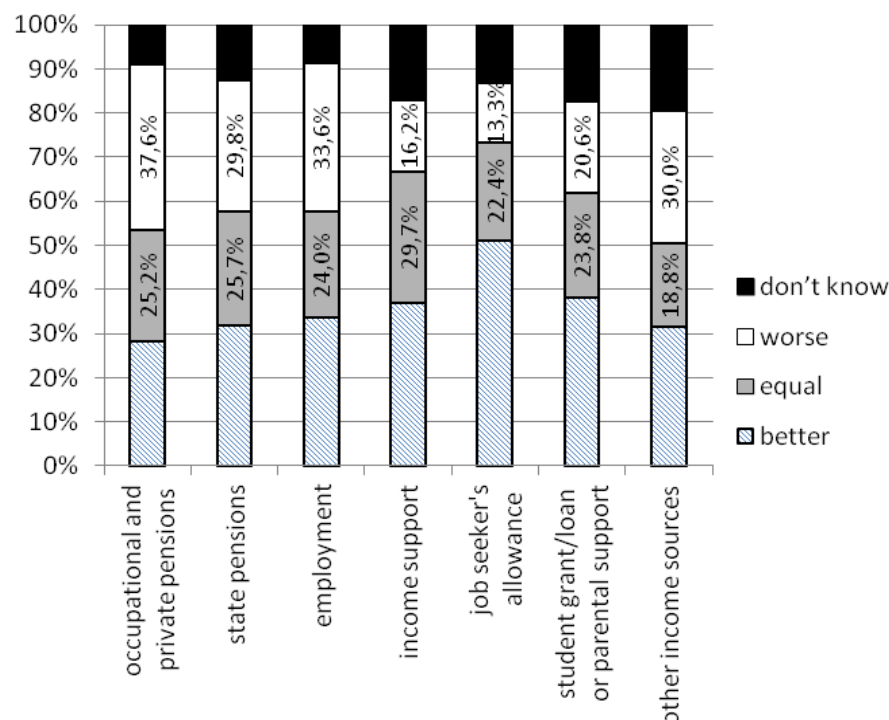


Source: Scottish Social Attitudes Survey (SSA) 2009, 2011, 2012.

As Figure 6 shows, on the other hand, occupational and private pensioners are the respondents most often stating that they anticipate a worsening of the economy – presumably because they fear the consequences for their pension payments –, and they are on average more decisive in their opinion than the state pensioners. The latter, in contrast, in fact are less inclined to believe in a worsening of the economy were Scotland to become independent than respondents who are in employment. Overall, those groups that have already previously been identified as those with

motivation to wish for a change in the current system – the ones depending on financial support – are also the ones expecting the most economic benefits from and perceiving the least risks in Scotland turning independent.

Figure 6: Whether respondent thinks that economy in independent Scotland would get better, worse or remain the same by main income source



Source: Scottish Social Attitudes Survey (SSA) 2009, 2011, 2012.

A model of support for Scottish independence

Based on the theoretical deliberations discussed in the first part of this paper, a binary logistic model was constructed. To be able to make use of a large sample size, indicators that were only asked about in one to four years were not included in the model. This includes all the indicators on expectations towards developments in independent Scotland (asked in 2009, 2011 and 2012), as well as those on subjective income perception, which varied in their response options too much to safely be combined.

The final model looks at the likelihood of a person supporting Scottish independence based on their main income source, religion, national identity, partnership status, as well as their relative income position through income quartiles, whether they have A-levels, and their age group. Since the information was gathered over a period of fourteen years, the four Scottish election periods were introduced as rough control for differences in associations over time. Sex acts as second control variable.

Table 3: Regression coefficients of a binary logistic regression of support for Scottish independence

<u>Variable</u>	<u>B</u>	<u>S.E.</u>	<u>Exp(B)</u>	<u>Variable</u>	<u>B</u>	<u>S.E.</u>	<u>Exp(B)</u>
Sex	-0.29	0.04	0.75***	Partnership status by main income source			***
Religion			***	<i>Partnership status by employment</i>	0.00		1.00
<i>Church of Scotland</i>	0.00		1.00	Partnership status by occupational and private pensions	0.28	0.17	1.32
Roman Catholic	0.33	0.07	1.39***	Partnership status by state pensions	-0.09	0.11	0.92
Other Christian	0.33	0.08	1.38***	Partnership status by job seeker's allowance	-0.10	0.27	0.91
Non-Christian	0.93	0.17	2.54***	Partnership status by income support	-0.64	0.23	0.53**
No religion	0.40	0.05	1.49***	Partnership status by student grant/loan or parental support	2.14	0.43	8.50***
Income quartiles			***	Partnership status by other income source	0.14	0.15	1.15
<i>first</i>	0.00		1.00	Main income source			***
second	-0.13	0.07	0.87	<i>employment</i>	0.00		1.00
third	-0.43	0.08	0.65***	occupational and private pensions	-0.33	0.17	0.72
fourth	-0.66	0.08	0.52***	state pensions	-0.19	0.12	0.83
unknown	-0.39	0.07	0.68***	job seeker's allowance	0.59	0.15	1.80***
National Identity			***	income support	0.12	0.13	1.12
Scottish not British	2.20	0.14	8.99***	student grant/loan or parental support	-0.84	0.17	0.43***
More Scottish than British	1.40	0.14	4.05***	other income sources	0.04	0.10	1.04
Equally Scottish and British	0.34	0.14	1.40*	Age group			***
More British than Scottish	0.00	0.19	1.00	18-24	0.72	0.13	2.06***
<i>British, not Scottish</i>	0.00		1.00	25-44	0.55	0.12	1.74***
Scottish election period			***	45-64	0.44	0.11	1.56***
<i>1999-2002</i>	0.00		1.00	65-68	0.15	0.12	1.16
2003-2006	0.23	0.05	1.26***	69-74	0.01	0.12	1.01
2007-2010	-0.07	0.05	0.94	75+	0.00		1.00
2011-2012	0.08	0.06	1.09	Highers/A-levels/equiv.	-0.14	0.05	0.87**
				Constant	-2.17	0.20	0.11***

Source: SSA 1999-2012 (excl. 2002, 2004, 2008). 12.4% missing. *Reference group in italics.*

***p<0.001, **p<0.01, *p<0.05. Dependent variable is coded 1=support for Scottish independence, 0=other constitutional preference with Scotland being part of UK.

Following the observation that being affiliated with the Church of Scotland is associated with a lower than average support for independence, this category was chosen as the reference category for religious affiliation. For the same reason 'British, not Scottish' was the reference category for national identity. Employment was the basic category for the main income source, the oldest age group of those aged 75 and over for the age groups, and the 1999-2002 span for the Scottish election periods.

Overall, the model reaches a Nagelkerke R^2 of 0.21. It is not intended to be a holistic model of Scottish independence support – due to the limitation in available information, but also because it is primarily concerned with one part of Klandermans' theory (the demand aspect), leaving out other considerations, such as how well each of the social movements can convince potential followers that they can achieve their goals.

In comparison to a model based only on age groups and Scottish election periods, the coefficients of age have grown smaller in the regression model – some of the other explanatory variables apparently accounted for some of the influential power of age on attitudes towards independence. Most of them are in some manner associated with age, but which do actually explain the age effect in this model?

Cohort effect and lifecycle effect indicators

In the previous parts of this paper it was shown that many of the factors influencing a person's attitude towards Scottish independence are associated with age. However, how does this aid in answering the question of whether the overall age effect is fuelled by life course phenomena or by changes from one cohort to the next? When looking at these factors more closely, some are clearly either cohort or life cycle related.

The main income source with its previously discussed categories is clearly to be regarded as a life course related indicator: there is, on the one hand, the binary distinction of work life and retirement inherent in it. On the other hand, unemployment and dependency on income support are more frequent amongst younger workers.

Similarly, the partnership status is clearly a life course effect: only one in five of the youngest age group lives in a partnership, as opposed to three quarters of the 45 to 54 year-olds.

Additionally, within the whole Scottish population, women are over five per cent less likely to want independent Scotland than men (32.7%). Amongst the youngest age group, the genders are balanced, whereas in the population over 65 years, 57% are female due to the longer lifespan of the female population.

Religiosity, on the other hand, is clearly a matter of cohort differences: Voas (2009) has argued that loss of religiosity does not typically occur in the course of one person's life but rather that religiosity is not successfully handed down from one generation to the next. Additionally, migration can increase the rate, e.g. of non-Christian religions. In Table 4, the rise of atheism and agnosticism over the established churches from one 20-year-cohort is plainly visible.

Table 4: Religious affiliation by cohort.

	1903-1922	1923-1942	1943-1962	1963-1982	1983-1994
Church of Scotland	58.2%	51.0%	31.5%	15.3%	8.2%
Roman Catholic	12.2%	12.6%	13.0%	13.1%	10.0%
Other Christian	12.0%	12.3%	11.0%	9.8%	10.6%
Non-Christian	.4%	.6%	1.2%	2.7%	4.1%
No religion	17.2%	23.6%	43.2%	59.1%	67.0%

Source: Scottish Social Attitudes Survey (SSA) 1999-2012 (excl. 2008). Cramer's $V = .184$. $p < 0.001$.

The respondent's level of education could also reasonably be called a cohort effect: over the course of the last century, the average time spent in education rose steadily, which was supported by raising the school leaving age from 14 to 16 in Scotland in 1973 and several reforms of Leaving Certificates and an expansion of the university system. Respondents are more open for Scottish independence if they have no A-levels. The highest rate of support is found amongst those with standard grades 4-7/CSE or an equivalent qualification (35%), while university graduates were least convinced of the benefits of an independent country (21.9%). This relation is found throughout all age groups; however, if it is taken into consideration that older people are more likely to have low educational qualifications and these are associated with higher support for independence, there would be expected to be more support for independence amongst the older population, not less. Therefore, other effects have apparently counteracted whatever influence education may exert.

The second indicator for the identification with a group after religion, the Moreno scale indicator of national identity, in contrast does work in the direction that helps explain the age differences in the attitude towards Scottish independence: 38.2% of the 18-24 year olds chose the response category 'Scottish, not British', but only about three in ten respondents over 45 did so – and this category is most strongly associated with support for independence, whereas a great majority of the respondents feeling 'More British than Scottish' or 'British, not Scottish' support the Better together camp (90.6%/89.8%).

Tilley and Heath (2007) argue that British national pride is on the decline, and they regard this as a generational effect. As did Colley, they see the former strength in British national identity springing from the past success of the British worldwide empire (including a rival on the other side of the Channel that needed to be united against), the shared religion that sets Britain apart from all other people, and its economic prosperity and leading role in the establishment of a welfare state. With McCrone (1997), they point out that many of these elements have diminished: the empire has fallen apart, religion is (as previously shown) growing less and less important, and Britain is only one member in a group of well-developed social welfare states - and not the one with the strongest economy or military power.

In an ordinary least square regression in which they controlled for a range of variables, including religion, age when the respondents ended their education, and the respondents' social class, they found that even when accounting for all these factors, many of which themselves are associated with cohort differences as mentioned in this paper, the authors still found a significant impact of 'generation' (10 year birth cohorts) on national pride.

While the SSA does not measure national pride, it does offer a binary indicator of whether the respondents feel British at all. This indeed does show a decline of feeling British starting in the cohort born in the middle of the last century.

Table 5: Feeling British by 20-year-cohort

	1903-1922	1923-1942	1943-1962	1963-1982	1983-1994
Does the respondent think of themselves as British?	54.6%	54.4%	54.4%	47.3%	41.5%

Source: Scottish Social Attitudes Survey (SSA) 1999-2012 (excl. 2008). 0.4% missing.

Controlling for cohort and lifecycle indicators

To check for cohort and lifecycle effects, two separate models were created from the first one: each with two explanatory variables that have previously been discussed as relatively safe indicators either for cohort effects or for lifecycle effects. For the cohort model, national identity and religious affiliation were selected; for the lifecycle model, main income source and partnership status were chosen. Both models contained the control for the time period in which the data was collected and the age groups.

The aim in building these two models and comparing them was to see in which of these models the age group coefficients would be reduced. A reduction of the coefficient would point towards these variables being linked to the observed age effect.

In logistic regression, the exponentiated beta coefficient ($\exp[B]$) expresses the odds ratio (OR): for example, each age group is entered separately into the regression, allowing to say that the respondent either is in this age group or is not in this age group. The OR is the ratio of the odds of this person favouring Scottish independence in the given age group over the odds of them favouring Scottish independence if they were in the reference group. Were the odds entirely even, the OR would equal one. If the odds of supporting independence are smaller than the odds of not doing so, the OR would be smaller than one but bigger than zero. If they are larger, the OR would be bigger than one. In these models, the oldest age group was elected to be the reference group, and since it has the smallest support rate for Scottish independence, the odds of doing so in any of the other groups are larger – leading to an exponentiated beta coefficient above one. For a reduction of the coefficient, it would – counter-intuitively – have to move closer to one (not zero).

Table 6: Coefficients (exp[B]) for age groups in 4 binary logistic regression models of support for Scottish independence

		age model	full model	cohort model	lifecycle model
age group	18-24	2.53***	2.07***	1.94***	2.56***
	25-44	2.04***	1.74***	1.65***	1.96***
	45-64	1.70***	1.56***	1.53***	1.66***
	65-68	1.24	1.16	1.13	1.26*
	69-74	1.03	1.01	1.0	1.05
missing		5.7%	12.4%	10.6%	6.6%
Nagelkerke R ²		0.02	0.21	0.18	0.04
-2*log likelihood		18421	15080	15636	18102

Source: SSA 1999-2012 (excl. 2002, 2004, 2008). ***p<0.001, *p<0.05

Table 6 shows the odds ratios of the age groups for all four models – the model only including age groups controlled by time periods, the full nine indicators model, the cohort and the lifecycle model. In the regression on age groups, the odds of supporting independence in the youngest age group are about one and a half times higher than in the oldest age group. The regression with nine explanatory variables reduced this coefficient to just over two and also reduced the OR of the other age groups, albeit to a lesser degree.

However, while, as was shown in Table 3, for each of the nine variables inserted into the regression at least some dummy indicators were significantly associated with the dependent variable, according to its Nagelkerke R Square value the cohort regression model with its four independent variables explained nearly as much as the full model with nine. Moreover, it reduced the impact of age even further, pushing the OR between youngest and oldest age group to just under two. In stark contrast, the life cycle regression model brought no noteworthy change to the age group coefficients.

It has to be annotated that despite the large sample sizes between n=14,283 (full model) and n=15,385 (age group model) the 95% confidence intervals of the age group coefficients of all models have overlaps. So for the youngest age group the 95% confidence interval of the exponentiated beta coefficient is 1.60 – 2.35 in the cohort model and 2.13 – 3.01 in the age group model. However, these large intervals are produced by splitting up the sample into different age groups. If instead the age and cohort logistic regression models are run with a continuous age variable, the 95% confidence intervals are close but mutually exclusive (using a categorical age variable instead of a continuous one in the main body of this paper was chosen because the age effect was more apparent when measured in units of several years rather than in one year units and because this would have allowed for variations of the effect between age groups).

The here presented results thus suggest that the association between age and attitude towards Scottish independence displayed in Table 1 is at least partly originating in cohort differences. However, the age effect was diminished by only about a third of its size. That means the evidence suggests that there is a cohort effect at play, yet it is not certain if there is not also some lifecycle influence exerted by factors that could not be examined with the given data.

Conclusions

In this paper, the origins of the association between attitudes towards Scottish independence and age, which have been subject to the public debate in light of the 2014 referendum, were addressed. Two distinct explanations for the apparent association were explored: cohort effects and lifecycle effects.

With the help of Klandermans' theory about why people join social movements and actively engage in them, some key factors in explaining why respondents favoured independence over other forms of ruling Scotland in the interviews were identified. People that had a comparatively bad socio-economic position, such as those living on job-seekers' allowance or individuals finding it hard to get by on their present income, and little to risk, were less likely to hold on to the status quo. Looking at expectations towards a future in an independent Scotland revealed that hope for a positive economic development is wider spread in these parts of the population, suggesting that they count on an improvement of their social and financial position were Scotland to become independent and at the same time do not have much to risk through it. This makes the referendum (and the campaign supporting it) instrumental in achieving a betterment of their circumstances, while at the same time it enables them to raise awareness for their discontent. Unsurprisingly, it was also established that national identity is a good measurement for whether respondents identify with the goal of independence, finding that it is not feeling Scottish per se but feeling predominantly or exclusively Scottish that sways them to favour this form of constitution.

Subsequently, for each of the two possible explanations of the age effect, two matching indicators were identified in the model: it was argued that the cohort effect was associated with religious affiliation and national identity, while the lifecycle effect was associated with the respondent's partnership status and their main income source. Two reduced regressions were conducted based on these indicators, a time control, and a categorical age measure and compared against a model without the cohort and lifecycle indicators. It was found that the cohort indicators accounted for about a third of the age group difference, while the odds ratio of support for independence between the age groups remained approximately the same in the lifecycle model. The results thus point towards a cohort effect. At the same time, since the shown cohort effect could only reduce, not entirely replace, the age influence, it cannot be ruled out that there is also a lifecycle effect involved.

Overall, this paper could only look at the first aspect in Klandermans' theory of demand, supply and mobilisation. It did not examine how well each of the campaigns are organised or how they are perceived by the potential voters, which would tell more about the supply element. The SSA also does not provide any indication towards the mobilisation of voters: it does not offer an 'undecided' option when asking how Scotland should be ruled, and it would find it hard to receive a reliable answer were it to ask if the respondent is likely to take part in the referendum (since for a part of the population this will be a decision made a few hours, days or weeks before the referendum, not years) – a factor that itself is discussed both as lifecycle and as cohort effect (e.g. Bhatti and Hansen 2011, Konzelmann, Wagner and Rattinger 2011). Furthermore, our model looked at the socio-economic reasons the respondents of the SSA may have for wanting Scottish independence, especially so in the lifecycle model. However, attitudes are not solely rooted in individual calculations; they are influenced by a social discourse (a small part of which is captured when looking at national identity) and by the opinions of an individual's social network. Especially when a person is embedded in a social network where there is a clear opinion about Scottish independence

communicated, this may sway them (Kitts 2000). With the available data, it cannot be determined whether people of all ages and all cohorts have equal chances of being part in a social network that is strongly for (or against) Scottish independence, or which influence the media channels they consume have.

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